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10/711,213	09/01/2004	Kei-Hsiung YANG	HANP0001USA	5212

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EXAMINER	
SIM, YONG H	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
06/23/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/711,213	YANG ET AL.	
	Examiner	Art Unit	
	YONG SIM	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6,8,9 and 12-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,8,9 and 12-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/1/2009 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 6 - 27 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 1, 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US 5,568,292) in view of Sekiguchi (US 6,771,327 B2).**

Re claim 1, Kim teaches an input-sensor-integrated liquid crystal display panel (Fig. 5), comprising:

a first substrate (1 “a glass substrate” Fig. 5) having at least one pixel controlling circuit (“TFT Matrix Circuit” Fig. 5);

a second substrate (1’ “upper glass substrate" Fig. 5) having a touch-detecting circuit (20, 22 “X, Y-directional grid wire” Fig. 5) on the surface of the second substrate and a color filter (7 “color filter” Fig. 5) formed on the touch-detecting circuit, being positioned on top of the first substrate (See Fig. 5) ; and a liquid crystal layer filled between the space formed by the first substrate and the second substrate (Col. 5, lines 26 – 27; “the liquid crystal is injected between the lower substrate and the upper substrate.”), wherein the input-sensor-integrated liquid crystal display panel includes no glass substrate disposed between the touch-detecting circuit and the liquid crystal layer (See Fig. 5 and Col. 5, lines 1 – 26 for the arrangement of the position-sensitive liquid crystal display.).

But does not expressly teach wherein the second substrate further having:

at least one protrusion jutting out the first substrate, the second substrate and the protrusion being one piece; and

a plurality of second signal connecting contacts disposed on the protrusion of the second substrate, the second signal connecting contacts connecting to the detecting circuit for transmitting a plurality of touch-detecting signals.

However, Sekiguchi teaches a liquid crystal display device with an input panel comprising a first (Sekiguchi: 6, Fig. 33) and second substrate (Sekiguchi: 21, Fig. 33), wherein a first substrate has a protrusion jutting out the first substrate and a touch panel flexible printed circuit is disposed on the protrusion (Sekiguchi: See Fig. 33)

Therefore, taking the combined teachings of Kim and Sekiguchi, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a substrate with a protrusion to dispose a flexible printed circuit for a liquid crystal display device with an input panel as taught by Sekiguchi into the input-sensor-integrated liquid crystal display panel as taught by Kim to obtain an input-sensor-integrated liquid crystal display wherein a second substrate has at least one protrusion jutting out the first substrate in order to allow a flexible printed circuit for a touch panel to be disposed on the protrusion for sending detection signals which would allow manufacturing efficiency and conserve circuit space on the substrate.

Re claim 6, the combined teachings of Kim and Sekiguchi teach the input-sensor-integrated liquid crystal display panel of claim 1, wherein the touch-detecting circuit is positioned on an inner side of the second substrate facing the first substrate (Sekiguchi: See Fig. 33.)

Re claim 12, the combined teachings of Kim and Sekiguchi teach the input-sensor-integrated liquid crystal display panel of claim 1 wherein the second substrate has at least on protrusion jutting out the first substrate (See Fig. 33 of Sekiguchi for the protrusion that juts out of the substrate below.).

4. **Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view Sekiguchi, as applied to claims 1, 6 and 12 above, and further in view of Hinata (US 6,369,865 B2).**

Re claim 8, Kim and Sekiguchi teach the input-sensor-integrated liquid crystal display panel of claim 1.

But does not show wherein the first substrate dis-coincides with the second substrate and has at least one protrusion.

However, Hinata discloses an input-sensor-integrated liquid crystal display panel wherein the first substrate (Hinata: 8b "substrate" Fig. 1) dis-coincides with the second substrate and has at least one protrusion (Hinata: See Fig. 1. Notice that the first substrate has a protrusion, and does not coincide with the second substrate.).

Therefore, taking the combined teachings of Kim, Sekiguchi and Hinata, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a first substrate with a protrusion dis-coinciding with the second substrate as taught by Hinata into the display panel of Kim and Sekiguchi to obtain an input-sensor-integrated liquid crystal display panel with the first substrate with

protrusion dis-coinciding with the second substrate thereby allowing IC for driving liquid crystal to be directly bonded on the first substrate to reduce complexity of the design layout and the manufacturing process.

Re claim 9, the modified teachings of Kim above teach the input-sensor-integrated liquid crystal display panel of claim 8.

But does not disclose 8 wherein the protrusion includes a plurality of signal connecting contacts.

However, Hinata discloses an input-sensor-integrated liquid crystal display panel wherein the first substrate (Hinata: 8b "substrate" Fig. 1) with protrusion which includes a plurality of signal connecting contacts (Hinata: See Fig. 1. 11 and 12 are the terminals for external connection for LCD drive circuit.).

Therefore, taking the combined teachings of Kim, Sekiguchi and Hinata, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a first substrate with a protrusion which includes a plurality of signal connecting contacts as taught by Hinata into the display panel of Kim and Sekiguchi to obtain an input-sensor-integrated liquid crystal display panel with the first substrate with protrusion which includes a plurality of signal connecting contacts thereby allowing IC for driving liquid crystal to be directly bonded on the first substrate to reduce complexity of the design layout and the manufacturing process.

5. **Claims 13 and 17 - 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Mai (US 2004/0141096 A1) and further in view of Sekiguchi.**

Re claim 13, Kim teaches an input-sensor-integrated liquid crystal display panel (Fig. 5), comprising:

a first substrate (1 "a glass substrate" Fig. 5) having at least one pixel controlling circuit ("TFT Matrix Circuit" Fig. 5);

a second substrate (1' "upper glass substrate" Fig. 5) having a touch-detecting circuit (20, 22 "X, Y-directional grid wire" Fig. 5) on the surface of the second substrate and a color filter (7 "color filter" Fig. 5) formed on the touch-detecting circuit, being positioned on top of the first substrate (See Fig. 5) ; and a liquid crystal layer filled between the space formed by the first substrate and the second substrate (Col. 5, lines 26 – 27; "the liquid crystal is injected between the lower substrate and the upper substrate."), wherein the input-sensor-integrated liquid crystal display panel includes no glass substrate disposed between the touch-detecting circuit and the liquid crystal layer (See Fig. 5 and Col. 5, lines 1 – 26 for the arrangement of the position-sensitive liquid crystal display.).

But does not expressly teach a color filter, being positioned on top of the first substrate, the color filter and the touch-detecting circuit being formed on different sides of the second substrate.

However Mai discloses a flat display device (Mai: Fig. 1) with a touch panel comprising a second substrate (Mai: 132, Fig. 1) with a color filter (Mai: 130, Fig. 1)

and a detecting circuit (Mai: 144, Fig. 1) formed on different sides of the second substrate.

Therefore, taking the combined teachings of Colgan1 and Mai, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the flat display device (Mai: Fig. 1) with a touch panel comprising a second substrate (Mai: Fig. 1) as taught by Mai to the input-sensor-integrated liquid crystal display panel of Kim to obtain an input-sensor integrated liquid crystal display panel with a second substrate with a color filter and a detecting circuit (Mai: 144, Fig. 1) formed on different sides of the second substrate to provide a display module with integrated touchscreen which is lighter and thinner (Mai: Para 9).

The combined teachings of Kim and Mai teach the input-sensor-integrated liquid crystal display panel wherein a color filter and the touch-detecting circuit are being formed on different sides of the substrate.

But does not expressly teach wherein the second substrate further having:

at least one protrusion jutting out the first substrate, the second substrate and the protrusion being one piece; and

a plurality of second signal connecting contacts disposed on the protrusion of the second substrate, the second signal connecting contacts connecting to the detecting circuit for transmitting a plurality of touch-detecting signals.

However, Sekiguchi teaches a liquid crystal display device with an input panel comprising a first (Sekiguchi: 6, Fig. 33) and second substrate (Sekiguchi: 21, Fig. 33),

wherein a first substrate has a protrusion jutting out the first substrate and a touch panel flexible printed circuit is disposed on the protrusion (Sekiguchi: See Fig. 33)

Therefore, taking the combined teachings of Kim, Mai and Sekiguchi, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a substrate with a protrusion to dispose a flexible printed circuit for a liquid crystal display device with an input panel as taught by Sekiguchi into the input-sensor-integrated liquid crystal display panel as taught by Kim and Mai to obtain an input-sensor-integrated liquid crystal display wherein a second substrate has at least one protrusion jutting out the first substrate in order to allow a flexible printed circuit for a touch panel to be disposed on the protrusion for sending detection signals which would allow manufacturing efficiency and conserve circuit space on the substrate.

Re claim 17, the combined teachings of Kim, Mai and Sekiguchi teach the input-sensor-integrated liquid crystal display panel of claim 13 further comprising a polarizer (Kim: 11 “polarizing screen” Fig. 5).

Re claim 18, the combined teachings of Kim, Mai and Sekiguchi teach the input-sensor-integrated liquid crystal display panel of claim 17 wherein the touch-detecting circuit is positioned between the second substrate and the polarizer. (See Fig. 5. the touch-detecting circuit 22 is between the upper substrate 1’ and the polarizing screen 11 of the bottom substrate.).

The limitations of claim 19 are substantially similar to the limitations of claim 12. Therefore, it has been analyzed and rejected substantially similar to claim 12.

6. **Claims 15 – 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over modified teachings of Kim, as applied to claims 13 and 17 – 19, and further in view of Hinata.**

Re claim 15, Kim, Mai and Sekiguchi teach the input-sensor-integrated liquid crystal display panel of claim 13.

But does not show wherein the first substrate dis-coincides with the second substrate and has at least one protrusion.

However, Hinata discloses an input-sensor-integrated liquid crystal display panel wherein the first substrate (Hinata: 8b "substrate" Fig. 1) dis-coincides with the second substrate and has at least one protrusion (Hinata: See Fig. 1. Notice that the first substrate has a protrusion, and does not coincide with the second substrate.).

Therefore, taking the combined teachings of Kim, Mai, Sekiguchi and Hinata, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a first substrate with a protrusion dis-coinciding with the second substrate as taught by Hinata into the display panel of Kim, Mai and Sekiguchi to obtain an input-sensor-integrated liquid crystal display panel with the first substrate with protrusion dis-coinciding with the second substrate thereby allowing IC for driving

liquid crystal to be directly bonded on the first substrate to reduce complexity of the design layout and the manufacturing process.

Re claim 16, the modified teachings of Kim above teach the input-sensor-integrated liquid crystal display panel of claim 8.

But does not disclose 8 wherein the protrusion includes a plurality of signal connecting contacts.

However, Hinata discloses an input-sensor-integrated liquid crystal display panel wherein the first substrate (Hinata: 8b "substrate" Fig. 1) with protrusion which includes a plurality of signal connecting contacts (Hinata: See Fig. 1. 11 and 12 are the terminals for external connection for LCD drive circuit.).

Therefore, taking the combined teachings of modified teachings of Kim and Hinata, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a first substrate with a protrusion which includes a plurality of signal connecting contacts as taught by Hinata into the display panel of the modified teachings of Kim to obtain an input-sensor-integrated liquid crystal display panel with the first substrate with protrusion which includes a plurality of signal connecting contacts thereby allowing IC for driving liquid crystal to be directly bonded on the first substrate to reduce complexity of the design layout and the manufacturing process.

7. **Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim, Mai and Sekiguchi, as applied to claims 13, 17 – 19 above, and further in view of Colgan (US 6,177,918 B1).**

Re claim 14, the modified teachings of Kim teach the input-sensor-integrated liquid crystal display panel of claim 13.

But does not expressly teach wherein the touch-detecting circuit is positioned on an outer side of the second substrate

However, Colgan teaches the touch-detecting circuit is positioned on an outer side of an insulating layer (Colgan: 73 "insulating layer/second substrate." Fig. 8H.).

Therefore, taking the combined teachings of Kim, Mai, Sekiguchi and Colgan, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having the touch-detecting circuit positioned on an outer side as taught by Colgan into the LCD panel of Kim, Mai and Sekiguchi to obtain an input-sensor-integrated liquid crystal display panel wherein the touch-detecting circuit is positioned on an outer side of a substrate in order to accurately derive the ratio of currents being measured.

8. **Claims 20 – 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Ikeda et al. (Hereinafter "Ikeda" US 6,504,584), and further in view of Sekiguchi.**

Re claim 20, Kim teaches an input-sensor-integrated liquid crystal display panel (Fig. 5), comprising:

a first substrate (1 “a glass substrate” Fig. 5) having at least one pixel controlling circuit (“TFT Matrix Circuit” Fig. 5);

a second substrate (1’ “upper glass substrate" Fig. 5) having a touch-detecting circuit (20, 22 “X, Y-directional grid wire” Fig. 5) on the surface of the second substrate and a color filter (7 “color filter” Fig. 5) formed on the touch-detecting circuit, being positioned on top of the first substrate (See Fig. 5) ; and a liquid crystal layer filled between the space formed by the first substrate and the second substrate (Col. 5, lines 26 – 27; “the liquid crystal is injected between the lower substrate and the upper substrate.”), wherein the input-sensor-integrated liquid crystal display panel includes no glass substrate disposed between the touch-detecting circuit and the liquid crystal layer (See Fig. 5 and Col. 5, lines 1 – 26 for the arrangement of the position-sensitive liquid crystal display.).

But does not expressly teach a color filter formed on the pixel controlling circuit.

However, Ikeda teaches a tablet integrated liquid crystal display wherein a color filter is on a TFT substrate/touch-detecting circuit (Ikeda: Para 44, lines 9 – 11)

Therefore, taking the combined teachings of Kim and Ikeda, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the tablet integrated liquid crystal display with a color filter on a TFT substrate as taught by Ikeda into the input-sensor-integrated liquid crystal display panel of Kim to obtain an input-sensor integrated liquid crystal display panel with color filter on a TFT substrate in which

the parallax between the tip of an input pen and a display image is eliminated without occurrence of the bending of a substrate and the damage of a switching element (Ikeda: Para 0011).

The combined teachings of Kim and Ikeda teach the input-sensor-integrated liquid crystal display panel with a color filter formed on the pixel controlling circuit.

But does not expressly teach wherein the second substrate further having:

at least one protrusion jutting out the first substrate, the second substrate and the protrusion being one piece; and

a plurality of second signal connecting contacts disposed on the protrusion of the second substrate, the second signal connecting contacts connecting to the detecting circuit for transmitting a plurality of touch-detecting signals.

However, Sekiguchi teaches a liquid crystal display device with an input panel comprising a first (Sekiguchi: 6, Fig. 33) and second substrate (Sekiguchi: 21, Fig. 33), wherein a first substrate has a protrusion jutting out the first substrate and a touch panel flexible printed circuit is disposed on the protrusion (Sekiguchi: See Fig. 33)

Therefore, taking the combined teachings of Kim, Ikeda and Sekiguchi, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of having a substrate with a protrusion to dispose a flexible printed circuit for a liquid crystal display device with an input panel as taught by Sekiguchi into the input-sensor-integrated liquid crystal display panel as taught by Kim and Ikeda to obtain an input-sensor-integrated liquid crystal display wherein a second substrate has at least one protrusion jutting out the first substrate in order to allow a flexible printed

circuit for a touch panel to be disposed on the protrusion for sending detection signals which would allow manufacturing efficiency and conserve circuit space on the substrate.

The limitations of claim 21 are substantially similar to the limitations of claim 6. Therefore, it has been analyzed and rejected substantially similar to claim 6.

The limitations of claim 22 are substantially similar to the limitations of claim 14. Therefore, it has been analyzed and rejected substantially similar to claim 14.

The limitations of claim 23 are substantially similar to the limitations of claim 8. Therefore, it has been analyzed and rejected substantially similar to claim 8.

The limitations of claim 24 are substantially similar to the limitations of claim 9. Therefore, it has been analyzed and rejected substantially similar to claim 9.

The limitations of claim 25 are substantially similar to the limitations of claim 17. Therefore, it has been analyzed and rejected substantially similar to claim 17.

The limitations of claim 26 are substantially similar to the limitations of claim 18. Therefore, it has been analyzed and rejected substantially similar to claim 18.

The limitations of claim 27 are substantially similar to the limitations of claim 19. Therefore, it has been analyzed and rejected substantially similar to claim 19.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YONG SIM whose telephone number is (571)270-1189. The examiner can normally be reached on Monday - Friday (Alternate Fridays off) 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/YONG SIM/
Examiner, Art Unit 2629

/Amr Awad/
Supervisory Patent Examiner, Art Unit 2629

6/14/2009